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CANADA
AND THE GREAT NORTH-WEST.

By PROFESSOR W. BOYD-DAWKINS, M.A., F.R.S.

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I take it that two of the principal functions of our Society consist in the first place in encouraging new discoveries and in recording them when they are made, and in the second place—and in my opinion it is by no means an unimportant section of our duties—in bringing before the public what is already known. I am here this evening not to add anything new to our knowledge, but to put before you as shortly as I can the general impressions made upon my mind during two visits to the British Dominion of Canada. I should like to say that those impressions are mere impressions of a traveller passing swiftly on his way through a land which will be the home of millions of our race. We will begin our story on the shores of the Atlantic Ocean (Fig. 1) and work our way steadily westward, making out as we go the physical character of the country, till we arrive at the Pacific. The traveller, as he gets nearer and nearer to the coast of North America, and arrives near the straits of Belle Isle, some 2,234 miles from Liverpool, is, as a rule, in the summer, confronted by fleets of icebergs, and as many as forty have been counted in the straits which are bounded on the north by the inclement shores of Labrador. We will suppose that the traveller has run the gauntlet of the bergs and finds himself inside the great estuary of the St. Lawrence—one of the most magnificent estuaries in the world. The steamer takes him rapidly and swiftly a distance of something like 700 miles, until he arrives at the royal city of Quebec. (See maps.) As he goes up the estuary there rise on the northern shores the rounded and ice-worn hills which in the interior arrive at an altitude of 3,600 feet, and may be dignified by the name of mountains. If he happens to pass along the coast in the autumn he will be struck by the beautiful tints of the foliage, bright red and bright yellow, the yellow almost shining like gold, and the whole looking in the far distance like a brilliantly-coloured Turkey carpet. There are nestling in the borders of the lower St. Lawrence a village here and a church there, and here and there a clearing, showing what a very small impression man has made upon that vast country. There are small villages and homesteads studding the great rocky and inclement region north of the estuary, and far away to the north, beyond the inhabited border, there is a comparatively unknown

country, a country abounding in lakes and rivers, and a country which in all probability in the long course of time will be the habitation of a great mining population of Englishmen. For although the climate there is intensely severe in winter yet the summer is exceedingly pleasant, and the minerals to be found are of great value. Gold, silver, and copper, are among the products, and I have no doubt that ultimately the mineral resources will be worked to their uttermost by the energy of our race. But suppose we cast our eyes southward. There we find a country which in a great many respects contrasts most wonderfully with the country to the north. Dense forests of pine extend southward, and as the traveller goes by steamer he can see the small clearings—rectangular strips of land—sweeping away from the estuary right up to the hilly regions of Acadia, which has been made famous in the story of "Évangeline." That region is inhabited for the most part by French people, and the population is by no means sparse on that side of the estuary. Churches are there, with their tall spires glittering in all the glory of tin—for I must tell you that tin spires and roofs are characteristic of French churches in Canada.

I do not wish to detain you upon this comparatively well-known ground, nor shall I say much about Quebec. The moment the traveller lands there he is struck by the fact that he has entered upon French ground; the population is French, French speech is everywhere, French hotels, French houses, and French surroundings generally. You might imagine when you are in Quebec that you are in Brittany or Normandy. And so you are, in a sense, in a part of the old France of the Monarchy. We must remember that the province of Quebec was founded by the French, and it fell to us by force of arms in the year 1739. The place then is distinctly French, and it is hard to believe that one is in an English dependency; but as a matter of fact there is no part of the British Dominions in any portion of the world where a more loyal and united people can be found, jealous for the honour of the Empire, than in this province. I am not going to say anything about the taking of Quebec, but I will give you one thing which struck me when I visited the field on which the fate of the British possessions in America was settled. On the heights of Montcalm, near a great column which records the spot on which General Wolfe fell, there is one of those buildings which are so characteristic of the English people, and which marks the law-abiding nature of our race—a most ugly and gigantic gaol. As a rule one of the first public buildings which Englishmen put up in a new country is a gaol. Seventy-four per cent of the population of Quebec is French, and a small proportion of it is English.

The route by rail from Quebec to Montreal passes through a low-lying district, abounding in woods. There are here and

there clearings, but the woodland appears to be in excess of the clearings. When the traveller arrives at Montreal he notes this fact, that the French element is very much less as compared with Quebec. It is only 54 per cent as compared with the 74 per cent of Quebec. At public meetings the chances are equal as to whether a speaker will use the English or French language. But in Quebec, so far as I know, the odds are very much in favour of French only being heard. I need not ask your attention to the University, nor to the various educational bodies, or the magnificent public buildings, because the place, I have no doubt, is almost as familiar to many of you in this room as the city of Liverpool. Supposing then we hurry forward from Montreal to Ottawa, the centre of the Dominion. On the journey the traveller passes through the same low-lying country of forest, lake, and stream, varied by tracts of cultivation as before. The uncultivated parts occupy a far greater part of the country than the cultivated. Ottawa is a city built upon a hill, and the hill is crowned with one of the most admirable and beautiful groups of public buildings that it has ever been my pleasure to look upon. Ottawa is the centre of the British Dominion, because of the rivalry that existed between the French population in the east and the English population—using the term English in the widest sense—in the west. They have not chosen Toronto, Quebec, or Montreal, but have selected what was a small lumbering town and made it their capital. An outward and visible sign of the French element in the population, as contrasted with the English, is the fact that the Parliamentary debates in the Canadian "Hansard" are printed in French and English. For purposes of debate it is absolutely necessary for members to know both the English and French languages. Thus in the Canadian Parliament a man is supposed to possess a knowledge which certainly is not demanded of our Imperial representatives in this country. I think it exceedingly improbable that some of our members would be able to carry on the debates with the same persistence in two languages as they now do in one.

I must pause for a moment to say a word about the principal trade of Ottawa. I have used the term "lumbering," by which I mean the cutting down of trees, their reduction to logs, and their introduction into the sawmill. Ottawa is the great centre of that trade, and I for one cannot help being struck by the waste of timber. I may say here, that so far as I have been through the forests not merely of Canada, but of the Eastern States, I have never seen any big forest trees alive. The forests are being rapidly destroyed, not merely by being cut down, but by the fires which are being continually caused through the carelessness of the people who are "lumbering." I cannot help thinking that that is a very important fact, and one which is quite worthy of the notice of the Legislature of the British

Dominion. Trees are being destroyed most ruthlessly, and the result will be that in a comparatively small term of years there will be scarcely any big trees left in the whole of the Eastern parts of North America. Another point in regard to Ottawa is that there exist in the neighbourhood valuable deposits of phosphate of lime (apatite), in which a large and important trade is being developed. It was not a little interesting to me to go some distance up one of the wonderful rivers, which form the highway in that part of the world, and examine some of the phosphate mines near Buckingham, and it was still more interesting to me to see the same material in process of manufacture at Widnes, in Lancashire. There is an important trade between this district and the mineral districts of Ottawa.

From Ottawa to Toronto the train takes us leisurely through woodlands and small clearings, but as we get near Toronto the clearings increase in number and the woodlands diminish. In Toronto we are in the midst of a population mainly composed of English and Scotch, and we leave behind the French element so predominant in Eastern parts. I may sum up the general origin of Toronto in these words. It was founded by a body of energetic Scotchmen, who have not only shown their shrewdness by establishing this great city in its present important position, but have also shown the value which they attach to education by assigning large blocks of land for the endowment of higher education. The result of all this is now shown in the magnificent University which exists there—an university which is open to all and free from all religious or sectarian prejudice. It is a distinctly secular institution, and, so far as I know, it is the very first secular teaching university which has been established in this world, being in this respect the predecessor of Owens College and the Victoria University. And in that University is another thing which is well worthy of our attention, namely, that the various religious sects have each of them their own special place of education. For instance, there are two distinct colleges belonging to the Church of England; a college called by the name of John Knox; a college bearing the name of Wycliffe; a college for members of the Baptist persuasion and St. Michael's College which represents the Roman Catholic element. I mention all these things to show you that Toronto is a very advanced place. The buildings may be compared to those of Bradford or Liverpool, and the public library is an admirable institution, and better than that in the city of Manchester. But we must turn west.

From Toronto, as far as the borders of the great lakes, there is the same class of scenery as before. We note the same rocky hummocks covered with trees, with sparse clearings, till we arrive at Owen Sound, on Georgian Bay, on the shores of Lake Huron.

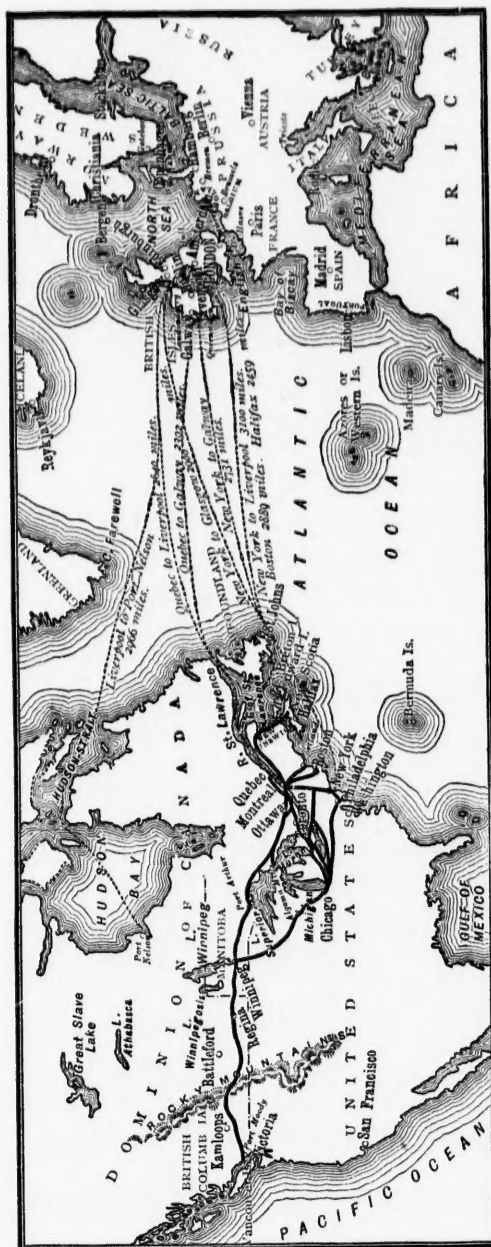
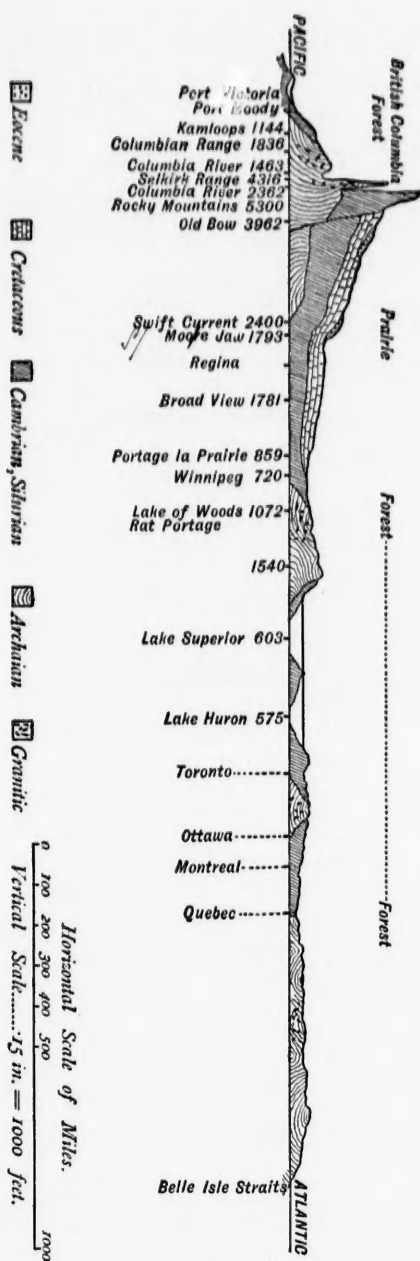


FIG. 1.—SKETCH-MAP FROM THE NORTH SEA TO THE PACIFIC OCEAN.

FIG. 2.— HORIZONTAL SECTION THROUGH THE BRITISH DOMINION

THE CANADIAN PACIFIC RAILWAY.

MAINLY ALONG THE LINE OF



A word with regard to these great lakes. The Canadian Dominion (see maps and section) is one network of great lakes, connected together by great rivers, and so much is that the case that it is possible to get with a canoe from the region of St. Lawrence almost everywhere, south, into the Mississippi, north, into Hudson's Bay. These lakes are of enormous extent, far greater in area than you can gather from a mere examination of a map. Lake Huron, for instance, is something like 21,000 square miles in extent; Lake Superior about 31,000 square miles; Lake Michigan some 22,000 square miles. I give you these figures in order that you may realise the enormous scale of these immense sheets of fresh water. When you are on one of the magnificent steamers taking a journey, you might imagine yourself to be upon the sea, for sometimes there is no land in sight. Swiftly and rapidly the traveller is taken on a steamer which provides comfortable and easy accommodation for at least 600 passengers, and which, after crossing Lake Superior, lands you at Port Arthur, on Thunder Bay. Port Arthur is a distinctly mining community, and, as far as that goes, you might be in Colorado, Texas, Arizona, or any other mining state of North America. The place consists of a series of stores, drinking saloons, and wooden houses, in which the natives live. As might reasonably be expected in such a district, there are magistrates, a mayor and corporation, and a whole *posse comitatus* of officials to keep a place where mining operations are going on in proper order. In this district enormous quantities of silver have been obtained; gold has also been discovered, as well as native copper. Speaking of silver reminds me of the present position of the silver question. The Canadian Pacific Railway is now nearly finished north of Lake Superior, through a highly metaliferous region, and connecting it with Toronto and the East. As a geologist, I feel justified in saying that a large quantity of silver will be thrown upon the market when this district is fully opened up, which will affect the relation of gold to silver, now such a burning question in commercial circles. (See map.)

From Port Arthur to Winnipeg, a distance of 429 miles, the scenery is the same as before, rocky hummocks, morass, and woodland, varied by the most picturesque lakes, by a complicated network of streams, and by little cultivation of any sort. This region hitherto has been an impenetrable barrier to the immigrant. When the railway through the district is completed, it will be one of the most important political and social factors in the Dominion. By the piercing of the barrier by the railway a land of Goshen will be opened to the British emigrant—the fertile land of the prairies. The whole of the country (see section, Fig. 2), some 1,500 miles wide, from the Atlantic Ocean to a point a little east of Winnipeg, is one

tract of woodland and dense undergrowth of conifers, maples, and other trees which have usurped the place formerly occupied by the giants of the forest.

On arriving at Winnipeg the traveller is met by a totally different class of scenery. Winnipeg stands at the junction of two rivers, the Red River and the Assiniboine. The great plains extend westwards for 839 miles to the foot of the Rocky Mountains. The streets of Winnipeg, like Chicago, are all straight, and run at right angles to each other on a dead level, and are lined with stores and large buildings. Winnipeg is famous not merely for its rapid growth, from a cluster of huts round Fort Garry (where Lord Wolseley earned his spurs) into a city of 25,000 souls, and the centre of government for the North-west, but also for its mud. The mud is so extraordinarily tenacious that the railway engineers have invented the special name of "gumbo" for it. It is a material which sticks as fast to the spade as so much treacle.

The geographical position of Winnipeg, (see Fig. 1 and map) standing as it does close to the great series of lakes, is of very considerable importance, because they are navigable by the large steamers, which can find their way from Winnipeg down to the shores of Hudson's Bay to Port Nelson. And this leads me to a very important point. At the present time the authorities of the British Dominion are not merely alive to the necessity of breaking, by means of a railway, through the barrier of forest which separates the civilisation of Europe and of the east from this great fertile land of the West, but they are also alive to the importance of opening out a trade route by way of Hudson's Bay. At the present moment there are exploring parties in Hudson's Bay to see what kind of a winter there is in that region, and it is by no means improbable that the hopes of the Canadians will be realised and a new trade route (Fig. 1) established between Port Nelson and Liverpool. This is an enterprise worthy of all encouragement, since it will open out the great corn lands of the West to the dense populations of the British Isles.

I have spoken of the corn lands of the West. As we push westwards from Winnipeg we traverse three distinct plateaux (see Fig. 2), every much like the plain of Lancashire and Cheshire, and like it, composed of alluvium, sand, gravel, and boulder clay. There is first of all the lower prairie or alluvium, nearly horizontal; a higher middle, and a third more irregular plateau, still higher, ranging to the foot of the Rocky Mountains. It is by no means rainless—indeed, when I was there, it was regular "Manchester weather," and the country in some places was covered with water. With regard to the capacities of that country for agricultural purposes, the mere impressions of a man flying through the country, as I was

travelling through it, are of any particular importance in themselves, but I have had an opportunity of verifying certain facts which are to be found in books, and which have been alleged by other observers. I believe that there is an enormous and almost unlimited field for agricultural operations. For instance, my friend Professor Macoun pointed out that there was no less than 150 millions of acres of good land available to the agriculturist and to the herdsman, between the Rocky Mountains and the region of Winnipeg. That region is remarkably well fitted for growing wheat, and the samples of wheat are magnificent. The scale on which wheat growing is beginning to be carried on may be gathered from the case of the Bell Farm, near Regina. Here I saw 8,000 acres of land under wheat, and Major Bell was preparing this year (1884) for 11,000 acres. The only thing necessary to convert the prairie into a wheat-producing arable district is to plough up the surface of the soil and put in the wheat. For how long the land will stand this without becoming exhausted is an open question; but quite long enough, in my opinion, to ruin the wheat growers in Britain. In this over-stocked country of ours, where the rents are high and the taxes heavy, it is absolutely impossible for the British farmer, farming on a small scale and after the fashion of his ancestors, to compete successfully with the great wheat-growing country of the North-west. He has to choose between two things, either to give up growing wheat in this country, or to migrate to those lands where it can be grown with advantage. The sooner he makes his choice the better will it be for him. If he will not choose either alternative, he can only look forward to ruin. You may reasonably ask, "How much land is taken up?" It seems to me very little as compared with the vast tract, but I have no doubt whatever that within the next fifty or sixty years it will be occupied by a large population. I have spoken of wheat growing, but I may add to that the growing of barley, of various kinds of roots, such as potatoes, turnips, and various vegetables, with cucumbers, pumpkins, and cauliflowers. Some of the biggest and finest cauliflowers that I ever saw in my life were in the Agricultural Show at Winnipeg. The Mayor, in his address of welcome to the British Association there, said that one cauliflower was big enough to feed the British Association; but I am glad to say that other food was given to us.

With regard to another most important element in farming, the growing of live stock, permit me to remark that from Winnipeg westward there is an enormous extent of land, providing nutritious and admirable grasses suitable for cattle. At the present time, as you go by railway westward from Winnipeg in the direction of the Rocky Mountains, you see herds of domestic cattle taking advantage

of these great pastures. But where are the buffaloes? In books you will get an impression that you have simply to go out into this region in order to see countless herds. Now I have been twice across the prairies, through their pastures, but I never had the good luck to see a buffalo in the flesh. I have seen plenty of their bones, for over vast tracts white objects catch your eye, which mark the spots on which these animals have been killed within the last few years. In some places along the line of the Canadian Pacific Railway you find a great accumulation of bones, which has given its name of "Pile o' Bones" to a place now known by the polite name of Regina, which is the headquarters of the fine soldierly mounted police, and is dignified by the possession of a stout wooden gaol. The existence of the buffalo is not only represented by their bones but by something which seems to me more mournful. For hundreds of miles the grass land is covered by their "runs"—like large hare-runs—which are mute witnesses of the former existence of countless herds.

I have said nothing hitherto about the Red Indian and the half-breed. At Winnipeg I fell in with a remarkably fine example of the latter in the person of the present able Premier of Manitoba. Further to the west there are large numbers of Indians of various tribes. I should like to say a word in favour of the Red Indian. Most of us hear so much said against him that it gives me great pleasure to record testimony on the other side. I dare say most of you have noticed in the newspapers of the last few days that a considerable amount of excitement has been felt in Canada with regard to the action of Crowfoot, the Chief of the Blackfeet. He is the most powerful chief in that country, and the question is, now that the half-breeds under Riel have risen against the authorities, what the action of Crowfoot will be. He has telegraphed to the Governor of Manitoba that he would not think of breaking his word to "the Great Mother;" that is to say, he pledged himself to remain at peace with the English people, and that he would not allow his braves to go out on the warpath. They would remain quietly cultivating their farms (for they have taken to farm cultivation). The following striking incident illustrates the noble character of Crowfoot, which happened to come before my notice, when I had the pleasure of making his personal acquaintance on the prairies during the meeting of the British Association in Canada.

At Gleichen, a parade of Blackfeet Indians had been organised for us. Some thirty or forty came galloping up on their ponies, dressed in coloured blankets and gay with beads and feathers, with rifles slung on their backs, and formed in line. The grouping was most impressive. The line of Indians, headed by their war chief in scarlet uniform, and wearing a hat with two horns, apparently made of feathers; the squaws

and children, with vermilion painted faces, squatting on the ground; the prowling dogs; the members of the British Association on the railway bank in the foreground; the rolling prairie in the middle distance; and the snowy Rockies rising like a wall on the horizon—formed a picture not easily to be forgotten. In front of the line stood Crowfoot, the principal chief, in a blanket striped brown, black, and white, a flannel shirt, a kind of waistcoat, and a pair of goloshes—a spare, powerful man of about sixty, with long black hair spangled with grey, parted in the middle and hanging over his ears, and ornamented with the head of a bird, probably an eagle. His forehead was low, his nose aquiline, eyes dark hazel, and mouth large and clearly cut. While I was talking to the interpreter, who stood beside him, Professor Macoun suddenly asked the interpreter to ask him whether he had seen him before. Crowfoot looked keenly at him, and a flash of recognition came into his eyes. "Ugh, ugh," he said, and made signs which expressed his pleasure. It appears that six years ago, Professor Macoun when travelling on the prairie went to Crowfoot's camp, which consisted of 150 lodges, and brought with him four cartloads of supplies. He went to that place because he knew that he would be safer there than outside. He cooked his food and slept, and prepared next morning to go without the loss of anything. To his horror he found that he was in the midst of men dying of hunger. In one lodge one man lay dead; in another three were dying. There was not an ounce of food in their camp, and the temptation of obtaining food was so strong that they would have taken it had it not been for Crowfoot, who would not allow it, principally on the ground that he had made a treaty with the English, and would rather die than break it, and partly also because Professor Macoun had trusted him. Professor Macoun supplied them with food, and the long-expected buffalo came that very day. Such a tale of simple heroism as this is worthy of being recorded of a people doomed to pass away before us, or to be absorbed into our race.

But we must return to the consideration of the conditions of life in this region so far as they relate to water and the seasons. Water may, in my opinion, be found almost everywhere in the region between Winnipeg and the Rocky Mountains, if not on the surface, by the usual process of sinking. The quality of the water, wherever the stream is a running one and has an outlet, is perfectly good, but where there is no outlet the water is alkaline. As to the seasons, winter begins at the opening of November, and the frost is sufficiently intense to penetrate many feet into the ground, according to Major Palliser. Winter lasts until about the middle of April, when it gives place almost in a day to spring, and the hot sun overhead rapidly carries the thaw deeper and deeper into

